

# Claims

[c1] What is claimed is:

1.A wireless communication devicecomprising:

an inner housing;

a cover detachably installed on the inner housing, the cover containing an ID module for identifying the cover;

a multi-band transceiver disposed on the inner housing for processing transmitted and received wireless signals in one of a plurality of frequency bands;

a detectioncircuitdisposed on the inner housing for communicating with the ID module of the cover and determining identification of the cover;

a memory electrically connected to the multi-band transceiver; and

a database stored in the memory for providing a frequency band identifier to the multi-band transceiver according to the identification of the cover provided by the detection circuit for changing the frequency band of the multi-band transceiver.

[c2] 2.The wireless communication device of claim 1 further comprising a plurality of matching circuits electrically connected to an antenna, each matching circuit capable

of sending and receiving wireless signals through a corresponding frequency band.

- [c3] 3.The wireless communication device of claim 2 further comprising a band switch circuit for electrically connecting the multi-band transceiver to one of the matching circuits according to the frequency band identifier.
- [c4] 4.The wireless communication device of claim 1 wherein the ID module of the cover comprises at least one contact pin having a first or second length for identifying the cover.
- [c5] 5.The wireless communication device of claim 4 wherein the detection circuit of the inner housing comprises at least one metal dome corresponding to the contact pin for detecting the contact of the contact pin, and thereby determining identification of the cover.
- [c6] 6.The wireless communication device of claim 4 wherein the ID module of the cover further comprises an insulating area containing insulating material surrounding each contact pin.
- [c7] 7.The wireless communication device of claim 1 wherein the inner housing comprises a printed circuit board (PCB) on which the multi-band transceiver, detection circuit, and memory are disposed.

- [c8] 8.The wireless communication device of claim 1 being a mobile phone.
- [c9] 9.A method of identifying a detachable cover of a wireless communication device, the wireless communication device comprising an inner housing and a multi-band transceiver disposed on the inner housing, the method comprising:  
providing an ID module on the cover for identifying the cover;  
detecting the identity of the cover from the ID module;  
and  
providing a frequency band identifier to the multi-band transceiver according to the identification of the cover for changing the frequency band of the multi-band transceiver.
- [c10] 10.The method of claim 9 further comprising searching a database for providing the frequency band identifier to the multi-band transceiver according to the identification of the cover.
- [c11] 11.The method of claim 9 further comprising electrically connecting a plurality of matching circuits to an antenna, each matching circuit capable of sending and receiving wireless signals through a corresponding frequency

band.

- [c12] 12.The method of claim 11 further comprising electrically connecting the multi-band transceiver to one of the matching circuits according to the frequency band identifier.
- [c13] 13.The method of claim 9 wherein the ID module of the cover comprises at least one contact pin having a first or second length for identifying the cover, and the method further comprises detecting the contact of the contact pin to determine the identification of the cover.
- [c14] 14.The method of claim 13 wherein the inner housing comprises at least one metal dome corresponding to the contact pin for detecting the contact of the contact pin.
- [c15] 15.The method of claim 13 wherein the ID module of the cover further comprises an insulating area containing insulating material surrounding each contact pin.
- [c16] 16.The method of claim 9 wherein the inner housing comprises a printed circuit board (PCB) on which the multi-band transceiver is disposed.
- [c17] 17.The method of claim 9 wherein the wireless communication device is a mobile phone.